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REMARKS

The Examiner has rejected Claims 4-6, 8-9, 17-19, 21-22, and 28 under 35 U.S.C.

112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding Claims 2-6, 9, 15-19 and 22, such rejection is avoided by virtue of the amendments made hereinabove. Regarding Claims 8 and 21, applicant respectfully disagrees with the Examiner's rejection, since the plain and ordinary meaning of the terms "signatures" and "obfuscations," as evidenced by dictionaries, are clearly different.

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The Examiner has further rejected Claims 1, 14, and 27 under 35 U.S.C. 102(e) as being anticipated by Bates, U.S. Patent No. 6,721,721. Applicant respectfully disagrees with this rejection, especially in view of the amendments made hereinabove. Specifically, the subject matter of Claims 2-6, and 9 et al. has been substantially incorporated into each of the independent claims.

In the latest action, the Examiner argues that "Bates is directed at least in part to storing virus information in a virus database ABSTRACT; FIG 1 42] that is accessed by indexed-based and/or directory-based search engines." The Examiner goes on to rely on the following excerpt from Bates to support such assertion.

"To support the search functionality described above, as well as to support additional virus checking and reporting functionality consistent with the invention, computer 30 utilizes a number of software components, including a search engine 40, a web crawler 42, a virus check controller 44 and a virus database 46.

Search engine 40 may be implemented using any number of known searching technologies, including index-based search engines and/or directory-based search engines, both of which are well known in the art. Search engine 40, however, is extended to support the generation of display information for a result set

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that is based at least in part on virus status information stored in virus database 46." (see col. 6, lines 53-65)

Applicant respectfully disagrees with this assertion. The indexed technique mentioned in the excerpt above relates to the manner in which the search engine retrieves information from the network (i.e. the Internet, etc.), not the manner in which the virus database is constructed. This is further evidenced by the continued discussion in col. 7 in Bates.

Thus, Bates merely suggests an index-based search engine, not an index-based virus database. Further, such search engine of Bates merely performs index-based searching and then applies standard virus scanning techniques in generation of search results. This is in stark contrast to applicant's "combining the list of virus signatures into a tree of virus signatures," as claimed.

The Examiner continues by asserting that "Official Notice is taken that indexes and directories are tree-structured (hierarchical). The Specification BACKGROUND provides further evidence of this." Again, applicant respectfully disagrees. First, applicant does not equate indexes with trees. Instead, applicant states that "[t]ree-based indexes are one form of indexing and searching mechanism." This statement clearly implies that tree-structures are something more specific with respect to mere indexing.

It appears that the Examiner has simply dismissed applicant's claim language under Official Notice. In response, applicant again points out the remarks above that clearly show the manner in which the claimed subject matter further distinguishes Bates. Applicant thus formally requests a specific showing of the subject matter in ALL of the claims in any future action. Note excerpt from MPEP below.

"If the applicant traverses such an [Official Notice] assertion the examiner should cite a reference in support of his or her position." See MPEP 2144.03.

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The Examiner is reminded that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. *Verdegaul Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, the identical invention must be shown in as complete detail as contained in the claim. *Richardson v. Suzuki Motor Co.* 868 F.2d 1226, 1236, 9USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim.

This criterion has simply not been met by the Bates reference. Despite the aforementioned paramount differences and in the interest of expediting the prosecution of the present application, applicant has incorporated into each of the pending independent claims, the following subject matter of former Claims 2-6, and 9 et al.:

“wherein the virus signatures each include a sequence of characters;
wherein the tree includes a plurality of branches each including a sequence of characters;
wherein a portion of the branches corresponds to a plurality of the virus signatures;
wherein the efficiency of the virus signature recognition is improved by reducing an amount of virus signature data that is compared against the data;
wherein the branches include further sub-branches each corresponding to at least one virus signature;
wherein the branches include upper branch portions and lower branch portions.”

Only applicant teaches and claims such a combination of features for providing a technique where the efficiency of the virus signature recognition is improved by reducing an amount of virus signature data that is compared against the data. A notice of allowance or a specific prior art showing of each of the foregoing limitations, in combination with the remaining claim elements, is respectfully requested.

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It is further noted that the Examiner's rejection of applicant's dependent claims is replete with deficiencies. Just by way of example, the Examiner rejects applicant's claimed "wherein the characters of the tree of virus signatures are obfuscated to prevent detection by the comparison" (see Claim 8 et al.) under 103(a) as being unpatentable over Bates, U.S. Patent No. 6,721,721, and Arnold et al., U.S. Patent 5,440,723.

Applicant respectfully disagrees with this assertion. It is noted that neither Bates nor Arnold make any mention of obfuscation, let alone "wherein the characters of the tree of virus signatures are obfuscated to prevent detection by the comparison," as claimed by applicant.

Further, it appears that various other claims (e.g. Claims 10-13 et al., for example) have been dismissed without a specific prior art showing.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir.1991).

Applicant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, since the prior art reference fails to teach or suggest all the claim limitations. A notice of allowance or a specific prior art showing of each of the foregoing limitations, in combination with the remaining claim elements, is respectfully requested.

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Still yet, applicant brings the Examiner's attention to the following subject matter in the added dependent claims, for full consideration:

"wherein the obfuscation prevents accidental self-detection of the tree of virus signatures" (see Claim 29);

"wherein the obfuscation is accomplished utilizing an exclusive-OR operation" (see Claim 30);

"wherein pre-processing is performed prior to use of the tree of virus signatures" (see Claim 31);

"wherein the pre-processing includes finding a correct location in a file where a virus resides, decryption, and emulation" (see Claim 32);

"wherein the virus signature recognition is improved since comparison of similar portions of the virus signatures with the data more than once is avoided" (see Claim 33); and

"wherein a pointer associated with a node of the tree is removed, if only one pointer exists, and an internal data structure includes a flag to indicate such removal" (see Claim 34).

A notice of allowance or a specific prior art showing of each of the foregoing limitations, in combination with the remaining claim elements, is respectfully requested.

To this end, all of the pending independent claims are deemed allowable, along with any dependent claims depending therefrom.

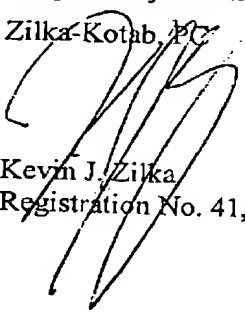
Reconsideration is respectfully requested.

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In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 505-5100. Applicants are enclosing a check to pay for the added claims. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-1351 (Order No. NAIIP016).

Respectfully submitted,

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